9626/13/O/N/17/Q10

Describe the characteristics which make spreadsheets suitable for modelling situations.

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9626/11/O/N/18/Q5

Many applications use computer models to trial new processes.

Give **four** drawbacks of using a model to create and run simulations.

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.....[4]

STUDENTS RESOURCE

CamScanner

3 9626/12/M/J/19/Q13

Many driving schools are asking IT companies to develop simulators for teaching customers to drive.

Evaluate the development of simulators for this purpose.

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STUDENTS RESOURCE

CamScanner

4 9626/12/F/M/20/Q2

For each of the **two** tables below, tick the most accurate statement referring to the use of simulation in pilot training.

(a)

	✓
The running and maintenance costs of a flight simulator are far greater than those of an actual aircraft	
Dangerous situations can be simulated without putting the trainee pilot's life at risk	
It is more difficult to simulate adverse weather conditions in a flight simulator	
The level of noise in a flight simulator is far louder than in an aircraft	

[1]

(b)

	✓
The pilot has to be able to use spreadsheet software efficiently	
There is no limit to how many 'g' a simulator can subject a pilot to, and for how long	
The simulator response will always be exactly the same as an actual aeroplane, as there are so few variables	
Sometimes pilots become overconfident after training on the simulator	

[1]

5 9626/12/M/J/20/Q11

A construction company is preparing to build a road bridge. Before building the bridge, it will create a computer model of the bridge to test the designs that have been produced.

Explain why the company considers it necessary to produce a computer model.

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STUDENTS RESOURCE

CamScanner

6 9626/12/M/J/21/Q10

Many nuclear reactions are simulated rather than being carried out in real life.

(a) Describe **three** advantages of using a computer-based model to run a simulation for these reactions.

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(b) Describe **two** disadvantages of using a computer-based model to run a simulation for these reactions.

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STUDENTS RESOURCE
CamScanner

9626/13/M/J/21/Q10

A company employs over one thousand workers in a multi-storey office block. Sometimes fire drills are carried out and workers have to leave the building. The company wishes to know if the use of a computer simulation would be a better method of discovering how easy it would be to empty the building.

Evaluate, by weighing up the advantages and disadvantages, the use of a computer simulation for this scenario.

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STUDENTS RESOURCE

CamScanner

8 9626/11/M/J/22/Q2

Flight simulators are used to train pilots to fly modern jet aircraft.

Describe a typical flight simulator.

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9 9626/13/M/J/22/Q7

A company has been asked by a government to construct a nuclear reactor. A computer model will be created before the reactor is built.

Explain why a computer model is needed in this scenario.

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STUDENTS RESOURCE

CamScanner

9626/01/SP/22/Q11

Car driving simulators are used to help people learn to drive a car.

Discuss the advantages and disadvantages of using car driving simulators rather than a real car.

[8]

STUDENTS RESOURCE

CamScanner